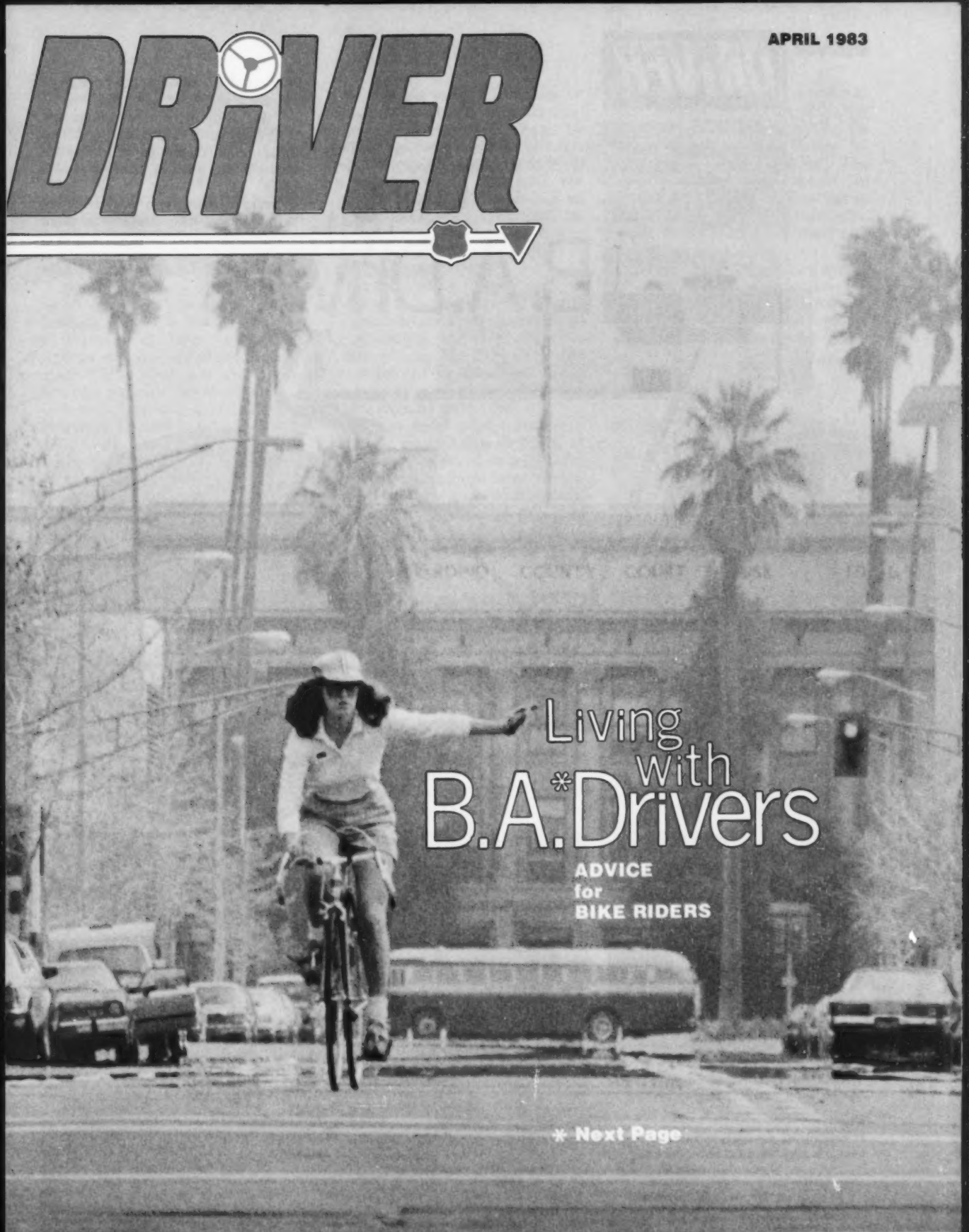
DRIVER

APRIL 1983



Living with B.A.* Drivers

ADVICE for BIKE RIDERS

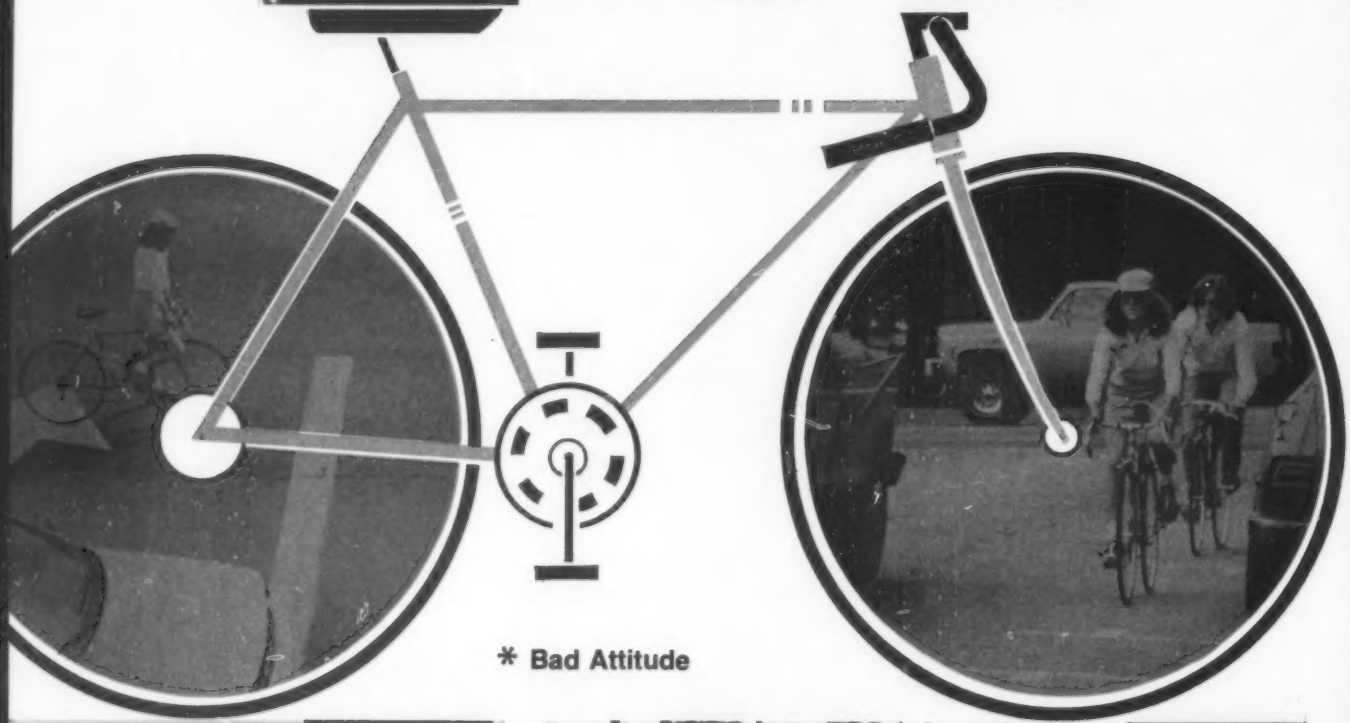
* Next Page

DRiVER

Living with B.A.* Drivers

They don't all do it, but enough of them to make it seem like they all do. Bicyclists who ignore the traffic laws give the rest of them a bad image. And consequently drivers develop a bad attitude toward all cyclists.

Serious bicyclists are different from the ones who weave in between



* Bad Attitude

Though not required by law, these bicycle helmets are a good accessory to consider.

(right)
If possible, plan your bike-riding route around those streets that have bike lanes.

cars. Serious bicyclists respect the surrounding traffic and so they conform to the rules for their own protection and for the convenience of the automobile drivers. They conform to the traffic so well that they aren't noticed; they are accepted as having a right to be there. Only the cyclists who ride against traffic are noticed and create the label "those $!&¢# bikers" in the minds of motorists.

It's much the same with cars. You won't consciously notice a certain kind of automobile. But let a couple of that make and model violate your right-of way and you'll quickly conclude "They're all that way." The few give the many a bad name.

Serious bicyclists think of themselves as piloting a vehicle, not a child's toy. They know they are in traffic with other vehicles that are far larger, heavier and sturdier, and therefore dangerous to them if they aren't careful.

Perhaps it is a lack of seriousness that causes the bad bicyclists to ride in illegal, dangerous ways. And perhaps they don't take their vehicles seriously.

Pedestrians? But bicycles are vehicles, and as vehicles they are subject to all the traffic laws that cars must obey. However, some bicyclists behave as though they were pedestrians. They park and ride on sidewalks. They travel facing the automotive traffic. They ignore traffic signs and signals. But bike riders are not pedestrians.

Riding on the forerunners of bicycles, called "hobbyhorses," was somewhat like walking. The rider sat astride a two-wheeled bike-like contraption and propelled himself by pushing against the ground with his feet. Obviously, no great speed could be reached (except downhill), but since the early hobbyhorses had no steering mechanism, they could be dangerous to real pedestrians. And so are today's bicycles. They are vehicles for the streets only.

The bicyclist has many of the same problems as the motorcyclist. He and his machine are small, compared to an automobile, and very vulnerable in any mishap. The B.A. drivers do not watch out for him. They do not respect him and many do not think he should even be on the road.

He may have some advantages over the motorcyclist in terms of visibility, though. A bicyclist sits taller and is therefore more visible. He is doing some movement himself, which may help him catch the eye of car drivers. Also, bicyclists seem to enjoy wearing colorful clothing, in contrast to motorcyclists, who seem to favor black for some reason.

But visibility aside, the biker is still very vulnerable. His vehicle weighs around 30 pounds and the four-wheelers weigh 100 times that. He has nothing around him for protection in collisions or falls.

The Toll: So, of course, he gets the worst of it. In 1980, 1200 bicyclists died in collisions with automobiles. Another 60,000 were injured. In years past the majority of those killed were children. Nowadays the percentages are more evenly distributed among adults, young adults and children. This may be because of the rise in bicycle riding among adults, for recreation and health as well as for economical transportation. The number of deaths rose 54 percent between 1970 and 1980. It's enough to give bicyclists their own bad attitude.

The National Safety Council estimates there are about 100 million pedal-powered vehicles being used in the U.S., so drivers cannot help but encounter bicyclists on the roads.

All of you are drivers, but some are also bicyclists. You as drivers should

continued

Straps on the toe clips should be adjusted so you can easily remove your foot when you have to stop.

(left)
This is how you'll see some bicyclists, riding on your right against the flow of traffic. This is both illegal and dangerous.

DRIVER

THE
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FOR THE MILITARY DRIVER

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THE EDITOR SPEAKS

DOUBLE CLUTCH

"MYSTERY" SINGLE-CAR ACCIDENTS

Traffic police and other investigators have long suspected that some single-car accidents are actually planned suicides. But of course that's a suspicion that isn't easy to prove. DRIVER has just received a letter from an Air Force NCO who last fall, in a deep and long-term depression, decided to take his life in such an accident.

An intelligent man, he made careful plans. First he picked out just the right stretch of road — a left-hand curve and a large tree for head-on impact. He practiced the route to determine just how fast he would have to drive for the car to break loose on the curve and crash into the trees. He decided how many mixed drinks he would have and in what time frame so that his blood-alcohol level would be just above the legal limit when he crashed.

You already know his plan didn't work. He crashed at high speed, just as he intended. But a long-standing habit saved his life. He was wearing his safety belts!

In the hospital, while undergoing corrective surgery for fractures of his feet, he was able to come to grips with the personal problems that had set him on the path to self-destruction.

He has this advice for others who may be planning a "mystery" accident: "There is help available. Seek it out. It does work. People do care. Because I've been there, maybe my experience will prevent someone else from trying the same thing."

living with B.A.* Drivers

continued

Beware any time you see a driver behind the wheel of a car parked by the curb. He might not be watching for you.

accommodate bicyclists because your vehicles take up the most space. You as bicyclists have to stay out of the way of cars to protect yourselves. This job is the more difficult but defensive riding is vital — in any car/bicycle mishap you will be hurt but, except in rare cases, the car driver will not.

We have some words for both the B.A. drivers and for the others who also drive but identify themselves as bicyclists. We hope the words will help improve attitudes.

The right way: You bicyclists out there: Remember that you are operating a vehicle, not acting as a pedestrian.

Ride your bicycle in the same direction as the car traffic, not against it. This is not only the legal way, it is also safer, in spite of what you might think. Your speed relative to the cars is less when you ride with traffic than

continued

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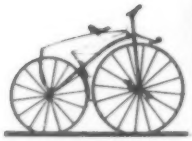
(right and far right) **At less** busy intersections you can make a left turn the same way the cars do, from the left turn lane. In heavy traffic you should dismount and use the crosswalk as the pedestrians do; it's safer.



Sidewalks are for pedestrians, not for bicycles. Keep your two-wheeler on the street.

Your bike must be equipped with reflectors for visibility.

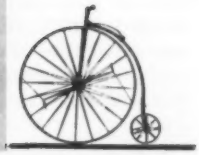
it would be if you were facing them. ("Closing speed" is your speed plus the speed of the other vehicle.)

It also makes your movements easier and more comprehensible to the others on the road. When you ride against traffic a right turn is impossible without crossing in front of opposing cars at several points. The drivers' attitude toward you will suffer. Your hand signals are easier to understand when drivers know your left turn, or whatever maneuver, will follow the same path as theirs.

Speaking of left turns, these maneuvers should be handled differently at busy intersections. Instead of riding in the left turn lane, get to the right and dismount the bike at the corner. Walk the bike to the opposite corner and then walk it across the cross street. Then you can mount again and go. This is a longer process than using the left turn lane, but it is safer. Incidentally, you should never ride your bike in a pedestrian crosswalk — always walk it.

Intersections can be dangerous places for any vehicle but especially so for bicycles. As we said, the bike suffers a serious weight and size disadvantage.

Door Stop: Be careful which streets you use when bicycling. When possi-

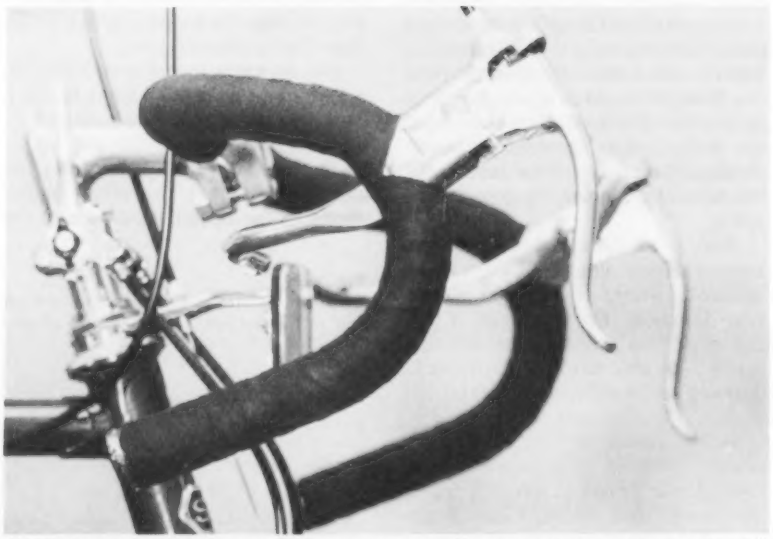


ble, use streets that have special bike lanes. Of course, these streets are the exception, so you must actually ride on streets without them. Keep to streets where cars are allowed to park at the curb. These streets are wider to allow for opening car doors and the extra space makes biking less hazardous.

Open car doors present a special danger. Often, drivers exit their cars without looking and throw their doors open to make an unexpected barrier for bikes. The choice of hitting an open car door or veering left into the path of moving cars is not a choice we'd like to make.

Watch the parked cars on your right as you approach them. Any car with a driver behind the wheel presents a potential collision. The driver might open his door into your bike, or he might move out of the parking space into your path. Watch the windows and the rearview mirrors on the cars. Make eye contact with the drivers if possible. However, don't rely on that; drivers may look right at you and still not see you. Be ready to stop.

Driveways are another danger point. As you roll past a driveway or parking lot entrance, cars and trucks can emerge and flatten your two-wheeler. Often drivers move out into the street without looking for cars, much less bicycles. All other vehicles are too large for bicyclists to mess with, so be careful.



Use only the regular brake handles for stopping; the so-called "safety levers" don't allow full braking pressure.

Actually, any kind of collision on a bike is bad news, even an impact with something smaller and more breakable. Watch for people and animals who are not looking for you. Pedes-

continued on page 16

There are NO absolutes

Despite rumors to the contrary, there is no one place on the road where it is best to ride. When it comes to motorcycle lane positioning, there are no absolutes. Similarly, riding in the center of a lane isn't as much of a hazard as some people would have you believe.

Lane positioning is a fluid situation that is constantly changing. It changes with traffic. It changes as road conditions alter. It changes as your speed waxes and wanes. It changes with weather. It's always changing.

Ideally, when you're riding you want to have as many options open to you as possible. One of the best ways to do this is to split the difference in what's available. Centering your machine gives you an equal chance to go in either direction. But, because of the many factors involved in motorcycling, the center of the lane is not where you are normally going to be riding.

And regardless of where you choose to ride, you don't want to get locked-in where you can go in only one direction. For example, if you run close to a guardrail you are only going to be able to turn away from it. The same is true if you ride next to the curb.

When riding a motorcycle you should think of each lane as being divided into three equal sections: left, center and right thirds. You will normally ride in either the left or right third just about where they meet the center third. In other words, on either the right side of the left third or the left side of the right third.

These two positions afford you the best overall view of traffic and allow traffic the best look at you.

On two-lane roads with traffic traveling in both directions you will generally ride in the left third of the lane just about where the left and center thirds meet (figure 1). This should put you on the left wheel track of car traffic. In addition to being able to see and be seen from this position, you've placed your bike to avoid pot holes and other road junk.

Now, when you meet a truck coming the other way, you're going to want to move to the center third because of the larger vehicle's wake.

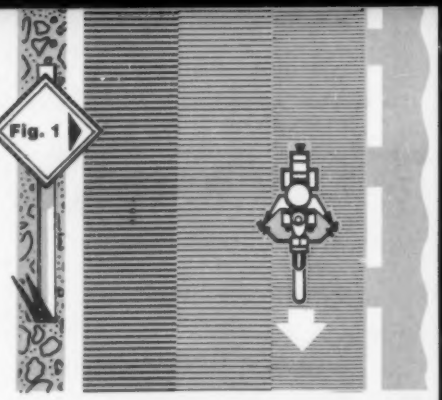
Traffic that may cross or enter your lane changes all of this. Regardless of where this traffic is coming from, the first thing you want to do is make sure they see you. Then you want to prepare for their possible actions.

To be seen by traffic coming from the right you move to the left side of the right third of the lane (figure 2). If the traffic is going to attempt to turn left in front of you, you move from the right to left side of the left third. This leaves you hugging the road's centerline (figure 3).

These first moves are especially important if you're in a flow of cars and trucks. In your normal left third position (where it meets the center third) you may be hidden from the other driver's view by the vehicle in front of you. If this is the case, the other driver could commit him or herself to filling the position in the traffic that you're already in.

For an extra measure of safety in either case, you may want to flash your headlight to help the other driver recognize you.

Then as you approach where you will actually face the other traffic, move to the center third next to the



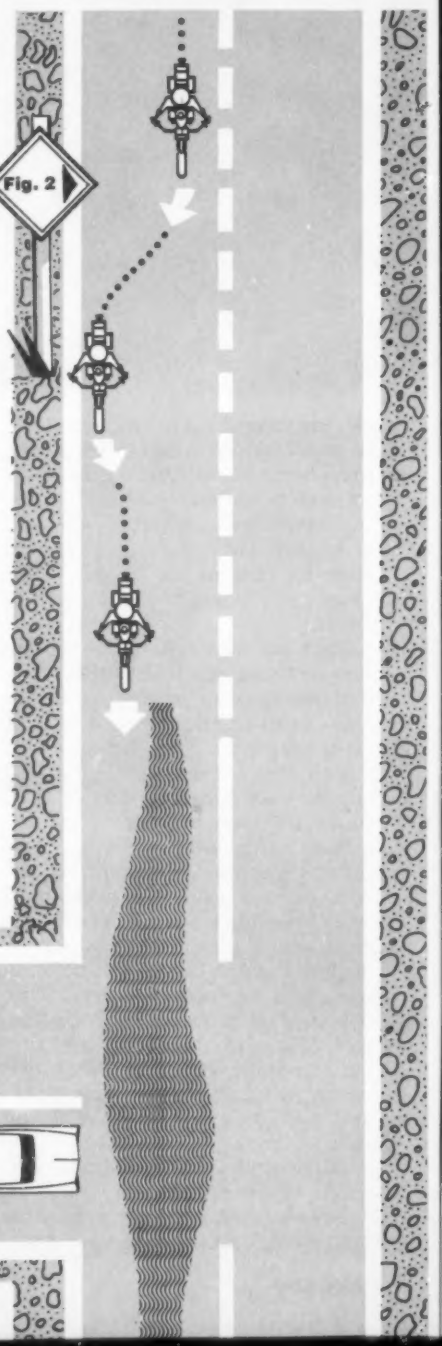


Fig. 1
The ideal two-lane riding position is in the left third of the lane just about where the left and center thirds meet.

Fig. 2
To be seen by traffic coming from the right you move to the left side of the right third of the lane, than back to the center third next to the oil/water track.

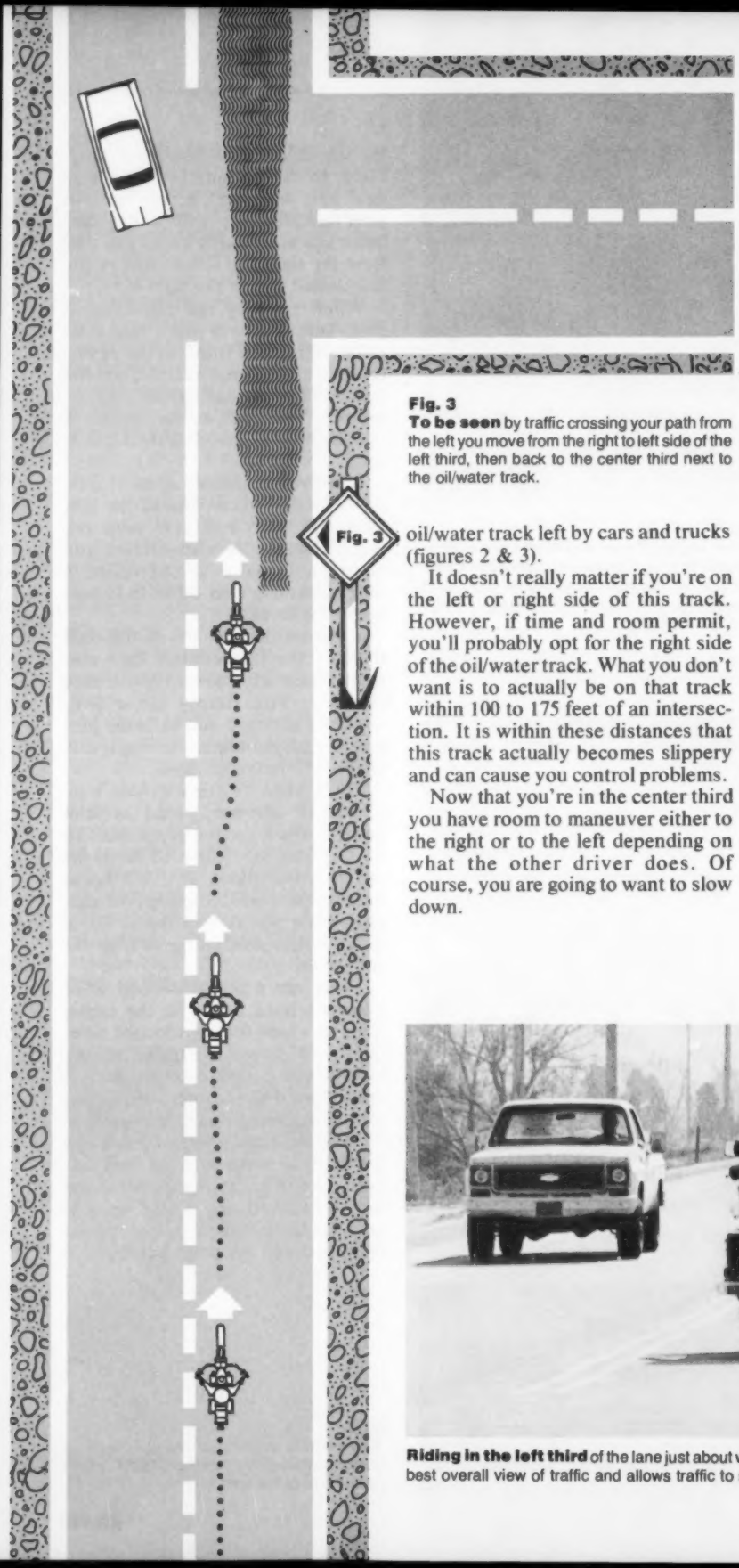


Fig. 3
To be seen by traffic crossing your path from the left you move from the right to left side of the left third, then back to the center third next to the oil/water track.

oil/water track left by cars and trucks (figures 2 & 3).

It doesn't really matter if you're on the left or right side of this track. However, if time and room permit, you'll probably opt for the right side of the oil/water track. What you don't want is to actually be on that track within 100 to 175 feet of an intersection. It is within these distances that this track actually becomes slippery and can cause you control problems.

Now that you're in the center third you have room to maneuver either to the right or to the left depending on what the other driver does. Of course, you are going to want to slow down.

The reason for getting to the right side of the oil/water track if at all possible is that going left to avoid an accident is a last resort. If you have to go left to avoid a collision and you don't get your bike back to a straight path, you're going to be heading into oncoming traffic. It is better to T-bone a turning car or hit it a glancing blow at 25 mph then to hit another car head-on at a combined speed of 50 mph or greater.

Now there's going to be an argument about having to cross the oil/water track in an emergency maneuver if you select the wrong side of the track to begin with. For example, if you're on the left side of the track and have to go right to avoid an accident, you'll cross the oil and water.

This is where being in the center third as close as possible to the track helps. The angle of crossing the track will be less and, as a result, the effect of the oil and water will be less. If you had to cross the track from the greater angle while coming from the left third, the bike would probably be leaning well over and/or under heavy braking when it hit the slick track and would be far more likely to go completely out of control.

Four-lane roads, divided highways and freeways present a slightly different approach to positioning. In most cases you're going to want to get in the lane furthest to the left (figure 4). Yes, the traffic in that lane is usually going faster than the rest, but

continued

Riding in the left third of the lane just about where it and the center third meets provides you the best overall view of traffic and allows traffic to see you.

Running in the right third next to the center third of a multilane highway's left lane is the best way to see and be seen.

(top, above)
Having changed position to be seen by traffic that might cross your path, you move to the center third next to the oil/water track to give yourself an equal chance of going right or left to avoid an accident.

To change lanes on a freeway you simply move over one-third lane.

(left)
You want to control your lane up to the point of actually exiting by staying as close to or in the center third of the lane.

the left lane leaves you more flexibility. In the left lane you'll have to deal only with people moving into your lane from the right. In the right lanes you have traffic coming at you from the right and left as well as the trucks that live in the right lane.

When running the left lane in multi-lane situations you'll want to be in the right third (next to the center third). This way you can see, and the traffic in front of and behind you can see you. This lane position also gives you the option of moving right quickly.

When you're coming up on a truck, move away from it. Get to the left. This will help you deal with the truck's wake. It also allows you emergency maneuvering room in case something falls off or is kicked up by the truck.

Being on the left side of the right third of the farthest left lane also permits easier, move visible lane changes. You simply move over one-third lane and you're in the best position for right lanes: the right side of the left third (figure 4).

When exiting a freeway you want to control your lane up until the point you actually leave the super slab. To do this you stay close to or in the center third (figure 5). This keeps other traffic from crowding into your lane while you're still there. Especially traffic attempting to take the same exit.

There are a few occasions when you may have to run in the center third of a lane for a prolonged time. One is when you have traffic on both sides of you. In this case you have to stay toward the center. However, you occasionally want to weave to the left and right edges of the center third just to make sure the traffic on both sides of you remembers that you are there. And you'll also want to correct this situation by getting out from between the other vehicles.

continued

Another center-third running situation crops up when fighting gusty winds. The center-third position gives you an even shot when pushed left by the wind and then pulled right when the gust stops.

If you increase your following distance from the minimum two seconds to three or four seconds you may know a little more about when the gusts are going to hit from the way the cars are pushed around in front of you. But you still won't know exactly how hard they're going to hit you. Besides, you can't adjust totally for each blast; you're going to get pushed some by each gust. The increased following distance also helps you keep an eye out for flying junk kicked up by the wind.

Winds coming from the left can also be complicated by oncoming traffic which breaks the blasts into gusts. This is just like the problems created by buildings and large groups of trees.

Mountain roads present another situation which may require prolonged use of the center third of the lane. If you were to hug the inside of the lane — next to the mountain wall — you might find yourself on rocks, sand and other debris from above.

On the other hand, if you hang close to the outside of the lane, you might cross the centerline into oncoming traffic. Or the oncoming traffic might cross the centerline just enough to clip you.

Mountain roads may require prolonged use of the center third of the lane.

And if you play Ronnie-Roadracer and go from one side of your lane to the other, you most certainly are going to bite the bullet going around one of the corners. If the road debris doesn't get you, crossing the centerline will. In fact, the Ronnie-Roadracers often keep their tires on their side of the centerline, but the extreme lean of their bikes puts most of their body into the oncoming traffic lane.

Being in the center third doesn't guarantee you against finding rocks, sand, debris, oil or other traffic in your path, but it does give you a third of a lane on either side for manuvering room.

Of course, the best bet is to slow down. You never know what you're going to find when you round a turn. Somebody might have blown an engine or broken a brake line or the side of the hill might have come down. As a result the entire road could be covered with oil and water or brake fluid or rocks or . . .

If it is or has been raining you'll want to slow way down. In the mountains, rain can bring down the whole works: rocks, sand, trees, etc. And there are always the problems associated with free-standing water: mainly hydroplaning.

Whether on mountain roads, freeways or city streets, the motorcycle rider must play "what-if" with every car and traffic situation. "What if he turns left in front of me?" "What if she doesn't stop?" "What if there are rocks just around this corner?"

By doing this, you as the rider pre-program yourself to practice handling each hazard. Then when it really does happen your reaction times are reduced.

Because the motorcycling environment is in a constant state of flux, lane positioning has to be fluid and be adjusted for every change. As a result there is no one place that is best and there are no absolutes.

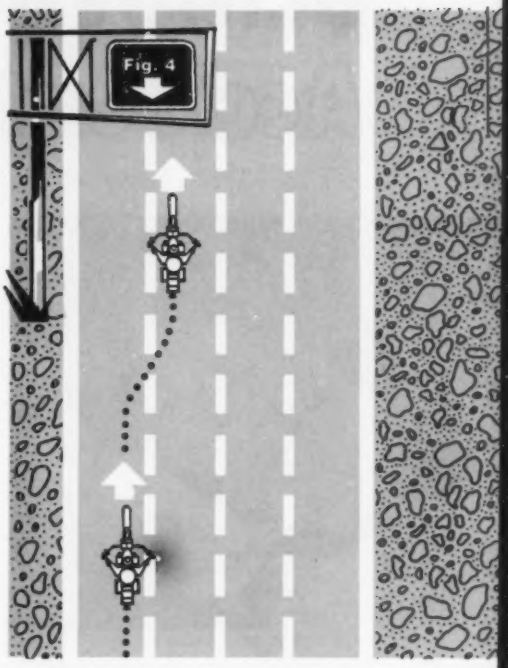


Fig. 4
The best place to ride in multi-lane situations such as freeways is in the lane furthest to the left. You'll want to be on the left side of the right third. To change lanes you simply move to the right side of the left third of the adjacent lane.

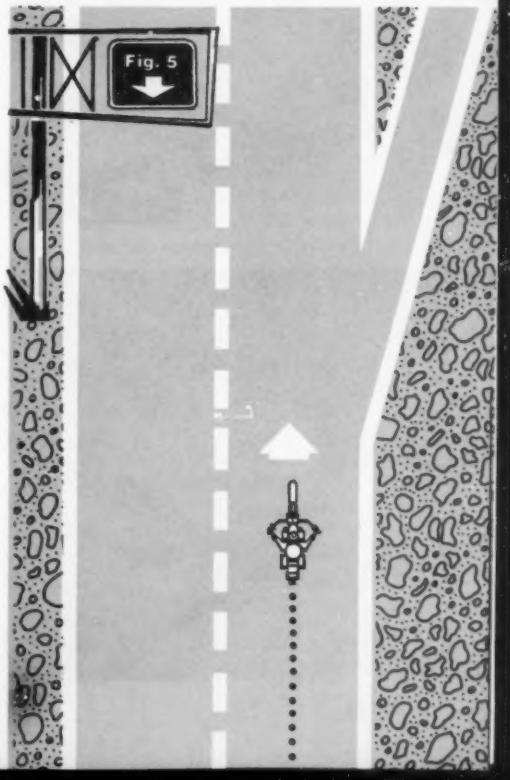


Fig. 5
To keep other traffic from crowding into your lane when exiting a freeway, stay close to or in the center third.

REMOVING HELMETS from Accident Victims

One rescuer applies inline traction (pull) by placing his or her hands on each side of the helmet with the fingers on the victim's jaw. This position prevents slippage if the strap is loose. Pull only enough to keep the head and neck in line. Too much pull may cause damage.

The second rescuer cuts or loosens the strap while the first maintains the inline traction.

The second rescuer places one hand on the jaw at the angle, the thumb on one side, the long and index fingers on the other. With his other hand, he applies pressure from the back of the head. This maneuver transfers the inline traction responsibility to the second rescuer.

The method for helmet removal shown here has been publicized by the Committee on Trauma of the American College of Surgeons for use by pre-hospital-care technicians and examining physicians. Because a helmet protects the face and head from injuries, rescuers and people providing the first medical attention may assume that an unconscious rider is not seriously hurt when quite the opposite is true. Scratches on the helmet may be the only clue to a fracture of the spine in the neck area.

Inappropriate actions in removing the helmet can damage the cervical cord when the overlying bony structure has been fractured.

Incidentally, helmets do not cause neck injuries. Studies show a slight decrease in the number of helmeted riders with neck injuries when compared with nonhelmeted riders, although the difference is so small as to be statistically insignificant.

This information is given primarily for ambulance drivers, emergency room personnel and other trained people. If you, as a motorist or cyclist, come to the scene of a traffic accident, the most helpful thing you can do is call an ambulance. Don't move unconscious or injured victims unless they are in danger from fire or could be struck by on-coming traffic. In the case of a motorcycle accident, you can raise the face shield of a helmeted victim but remember you *may* do more harm than good if you remove the helmet.

The full-face-coverage helmet is more difficult to remove than the helmet used for our pictures, but the same removal techniques apply.

The rescuer at the top removes the helmet. Three factors should be kept in mind:

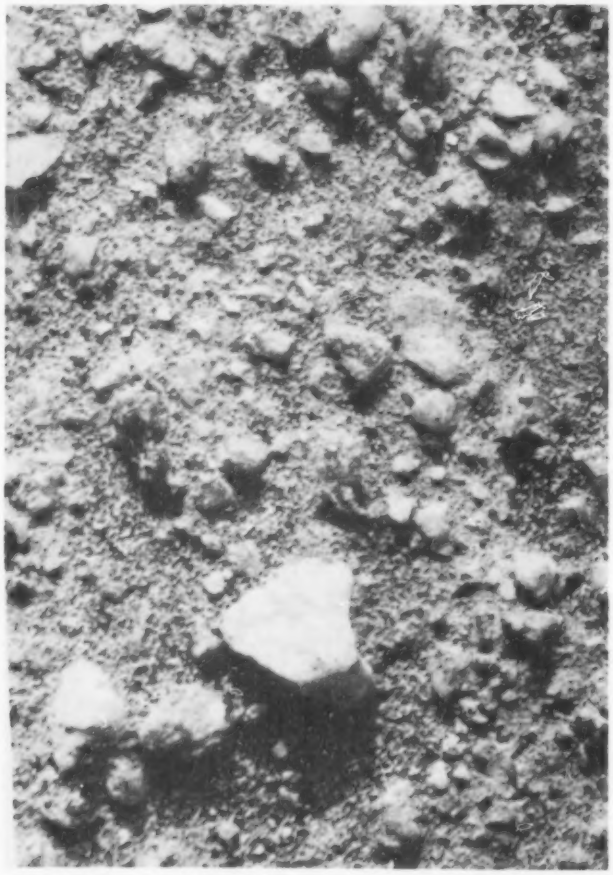
- The helmet is egg-shaped, and therefore must be expanded laterally (sideways) to clear the ears.
- If the helmet provides full facial coverage, glasses must be removed first.
- If the helmet provides full facial coverage, the nose will get in the way. To clear the nose, the helmet must be tilted backward and raised over it.

Throughout the removal process, the second rescuer maintains inline traction (pull) from below in order to prevent head tilt.

After the helmet has been removed, the rescuer at the top replaces his hands on either side of the victim's head with his palms over the ears.

Inline traction is maintained from above until a backboard is in place.

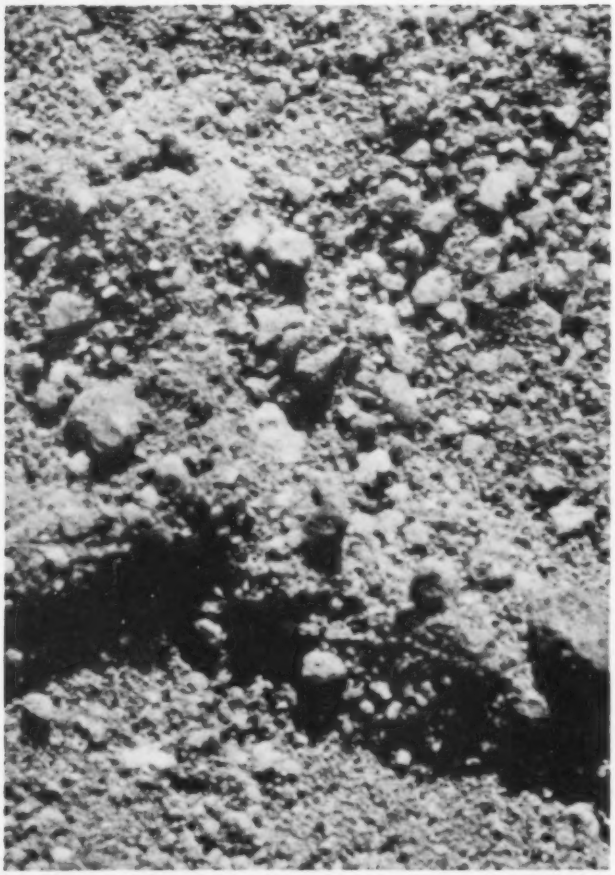
DRIVER Road Tests



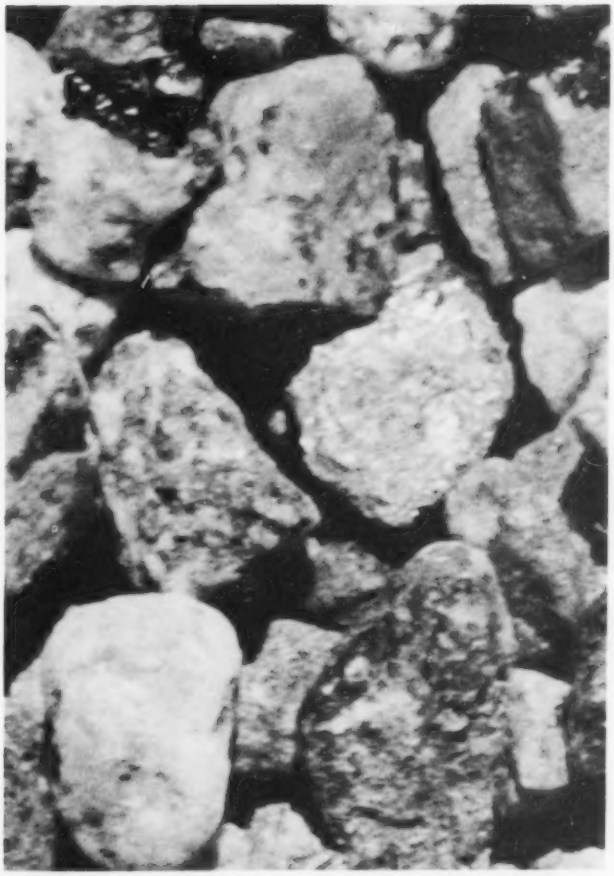
"The boulder in this picture is the size of the Lincoln Memorial . . ." Actually, it would just *feel* that way if it were embedded in your elbow. This is an urban freeway.

"On the plain 'Ishtar Terra' the landscape is rugged, with many rocks and occasional craters from meteors . . ." This is really an asphalt road, somewhat worn by vehicle travel. It would be considered smooth to the driver of an automobile.

These are blow-ups of some road surfaces you might encounter as you ride your motorcycle. Obviously, even a smooth, paved road is not so smooth when viewed up close. Your protective clothing can prevent many a road burn.

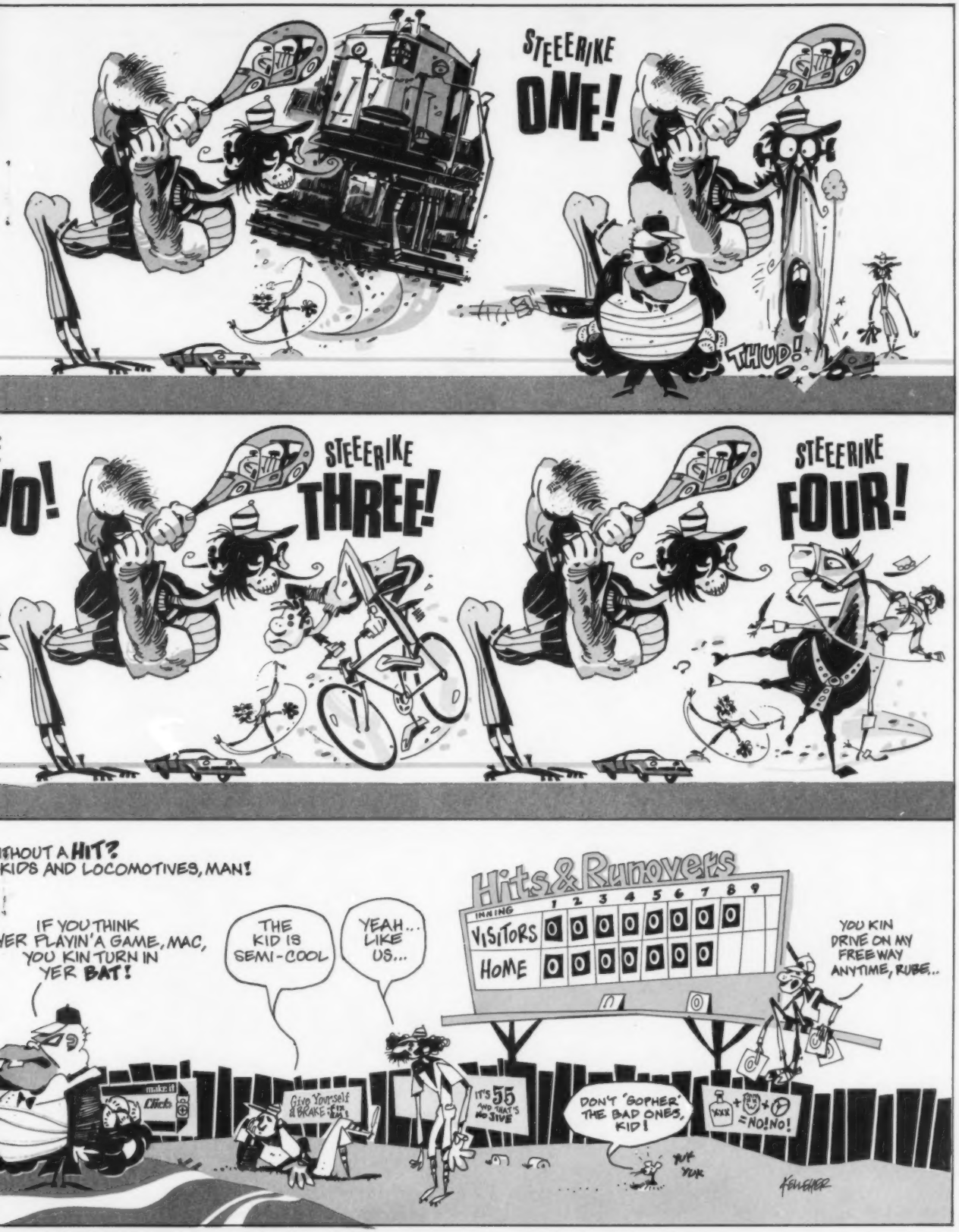


"The Moon-like area of 'Terra Boomdeay' shows erosion by wind . . ." Yes, you're right. It's a dirt road, with tire marks. It doesn't look very smooth up this close, either.



"This area is very rocky. Any manned expedition would have to search elsewhere for a suitable landing spot . . ." This is the gravel covering for a new asphalt road. It would be even less comfortable than the worn asphalt.

SEMI-COOL
"Batter UP!"
THE UMPIRE: "Blind Pew" Dillinger
THE PITCHER: Axel Dent – He can wreck ya!
THE CATCHER: "Road Signs" Warner
THE BATTER: Rube Statistic
STEEERIKE TWO
...FIVE! ...SIX! ...SEVEN!
...and steeerike TEN!
...YER-R-R HOME
SAFE!
STRIKE TEN? SAFE? A HOMER WITHO
LIKE, THAT TURKEY'S THROWIN' LITTLE KIDS
WHAT KINDA GAME IS THIS?
YER


STEEERIKE ONE!
THUD!
STEEERIKE THREE!
STEEERIKE FOUR!
THOUT A HIT?
KIDS AND LOCOMOTIVES, MAN!
IF YOU THINK YER PLAYIN'A GAME, MAC, YOU KIN TURN IN YER BAT!
THE KID IS SEMI-COOL
YEAH... LIKE US...
Hits & Runovers
INNING 1 2 3 4 5 6 7 8 9
VISITORS 0 0 0 0 0 0 0 0
HOME 0 0 0 0 0 0
YOU KIN DRIVE ON MY FREEWAY ANYTIME, RUBE..
make it Clicks
Give Yourself A BREAK
IT'S 55 AND THAT'S NO JIVE
DON'T 'GOPHER' THE BAD ONES, KID!
XXX
=NO!NO!
KELLEHER

continued from page 5

trians might step out into the street and not see you in time to jump back. Children and old people especially might not be able to jump out of your way. Be alert and ready to dodge them.

The right of way rules are the same for bicyclists as they are for cars, but since you will most likely lose in any confrontation, it is best to allow others to go first unless you are sure they won't challenge you.

Sign(al)s: Just as the right of way rules apply to you, so do all signs and traffic signals. That's the law, and as usual the law is based on common sense. When you behave just like the car traffic, they know precisely what

Left arm bent at the elbow pointing up means right turn.

Left arm down by the side means slow or stop.

to expect of you. Stop for lights and the drivers will respect you. Ride through red lights and sooner or later someone will make tread marks on your head. It won't necessarily be a B.A. driver, just someone who didn't expect you to do what you did.

We mentioned hand signals before. Those are your only way to show your intended movements to others on the road. Make sure you use them every time. Left arm straight out to the side means left turn; bent at the elbow pointing up means right turn; down by your side means slow or stop.

Keep your hands covering both brake levers at all times, except when you use the left hand to signal. If your bike has the so-called "safety levers," don't use them. Only the regular handles will allow you to apply full braking pressure.

Your bike should be equipped with all the safety equipment required by your local authorities. This will usually be reflectors, and a light for riding at night.

Think about adding a bicycling helmet to that equipment. Your head will end up second best in any confrontation with metal or concrete, even at the speeds that bicycles travel.

Better Attitude: The drivers at this point have been responding "hear, hear" to our advice. Now we will add a very few words specifically for them.

You folks behind the windshields would like bicyclists to follow all the rules but they don't always. You can't expect them to, any more than you can expect it of other drivers. In other words, stay alert when you are around bicyclists. Seeing them and being ready to avoid them is the best you can do.

They might move into your path at any moment. The cyclist you are following might weave in front of you if he is inexperienced, and you have no way of knowing how experienced he is.

Be very careful to watch for them to your right at intersections as you prepare to make a right turn.

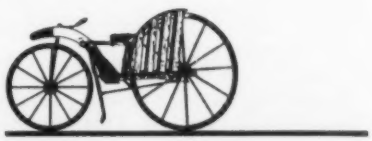
Watch out for any hazards the bikes might have to avoid, including things that would not affect your car, such as storm sewer gratings or small puddles. Allow the biker room to avoid them. But any time you avoid a bike, also remember to keep out of the way of other automobiles.

Left arm straight out to the side means left turn.

Be especially careful around children on bikes. They might try something dangerous, or they might not know the rules of the road, or they might be riding a bicycle that is too large.

Finally, be aware of your own attitude toward your two-wheeled neighbors. They do indeed have a right to be there. Allow them that right, and the right of way whenever possible. If you have a bad attitude toward them, think about yourself when you got your first two-wheeler. When you identify with them you might feel more friendly.

Our thanks to Barbara and Major Hill of Acme Bicycle Company in Redlands, Calif., for their help with the photos for this article.



CONSCIENTIOUS APPROACH

Launching a car evenly when it weighs less than most sub-compacts but has 10 times the horsepower takes more than average skills.

Drag racing is probably the safest of all motorsports. But before you argue that it has to be because of the short races and uncomplicated, straight tracks, consider the high speeds obtained. Speeds that often exceed 250 mph!

The safety record of drag racing isn't the result of short races on ¼-mile straight courses. It is the outcome of consciously approaching every aspect of the sport with the safety of the competitors, crews, workers and fans paramount.

The 1983 Drag Rules of the National Hot Rod Association run 160 pages and spell out everything (in relatively small print) from advertising to who wins what, with some interesting points along the way. For example, the main headings in the General Regulations section are: Engine, Drive Train, Suspension and Brakes, Frame, Wheels and Tires, Interior, Body, Electrical, Support Group and Driver.

Under "Driver" there are headings for: Apparel, Appearance, Credentials, Crotch Strap, Driver Conduct, Fire Extinguisher, Head Protector, Helmets, and Goggles, Occupants, Protective Clothing, Seat Belts, Shoulder Harness, Warmups and Window Net.

As you can see, driving in a sanctioned drag race isn't simply getting in and going. Just ask TSgt Jim Dickey, a veteran of 10 years of serious competition.

"Sure, anybody can drive today's street cars down a ¼-mile," Dickey retorted, "but with lots of horsepower in a light-weight car it's not so easy to go down the quarter straight.

"Things happen fast. If the drive wheels hit anything on the track like oil or water, the car will turn right or left 90 degrees. That'll aim you right for the guardrail. If you overcorrect, you'll end up aimed toward the other guardrail."

Dickey went on to talk about a recent experience he had. He'd done a wavey burn out (spinning the wide, treadless tires through water to clean their surfaces) and as a result he couldn't get back into his own tracks.

Dickey's protective clothing includes a two-piece suit (on the car), gloves and boots of flame-retardant materials, and his "Darth Vader" helmet complete with breather and filter.

When he did launch his car it didn't grab even traction and suddenly turned left toward the guardrail.

"The people behind me thought I was going to hit the guardrail," Dickey commented, "and I thought I was going to hit the guardrail. Anyway, I overcorrected it, which is what kept me from hitting the guardrail. And it went right and it came up in the air. There I was up on the left rear tire only with all that horsepower . . ."

The difference between driving a street car and a machine built specially for drag racing is like the difference between piloting a small, pleasure-type aircraft versus a supersonic fighter such as the F-15 Eagle.

The engine in Dickey's A Altered drag car had originally been in a Plymouth Road Runner. However, the first time he drove the new car it really got his attention.

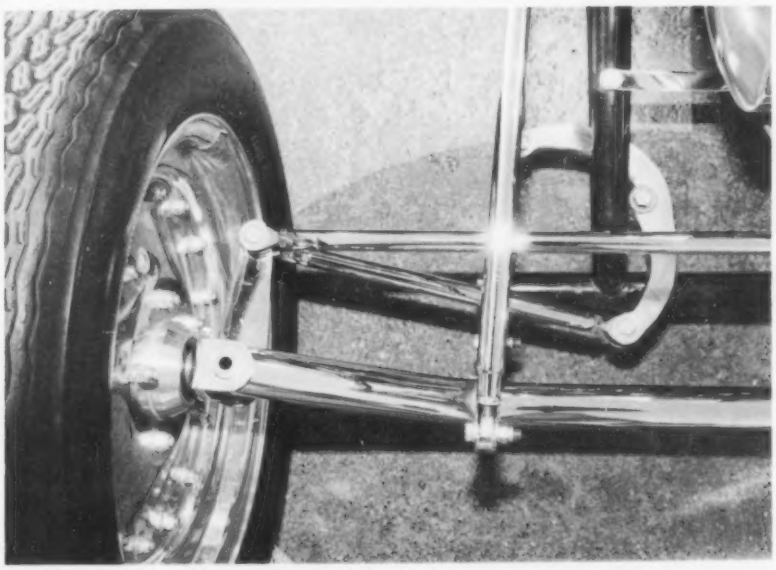
continued

The five-point belt system (shoulder harness, seatbelt and crotch belt) must have a single, quick-release attaching point. All the belts are regularily inspected for fraying and have fire retardant covers.

This is the off-duty office of TSgt Jim Dickey, a flight engineer instructor with the 53rd Military Airlift Squadron at Norton AFB, Calif.

Although not required, Dickey has an onboard, manually controlled fire extinguisher system of Halon FE 1301 in his drag car.

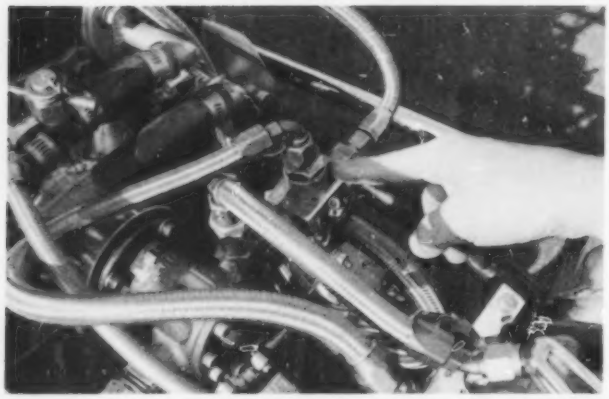
The smaller bars on the sides of the roll cage would help keep Dickey's helmeted head within the protection of the cage in case of an accident.



Every nut and bolt in the steering system is SAE Grade 8, with lock washers where possible.

conscientious approach

continued



A positive fuel shut-off is just one of the many small safety features.

Once the air comes out the other end of these intake trumpets it will have helped produce nearly 700 horsepower.

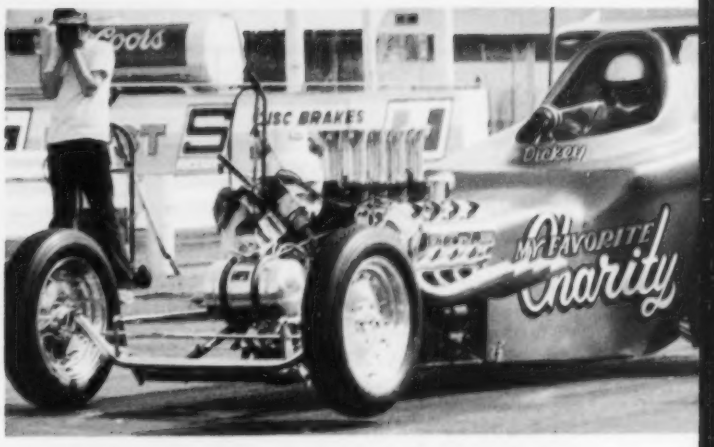
Of course, the engine has seen a lot of modifications since it started life in the street sedan. Instead of displacing 426 cubic inches, the Hemi — with a .060 over bore and .400 stroker crankshaft — now displaces 480 cubic inches. It has a compression ratio around 13½-to-one and runs methanol through a Crower fuel injection system. And it produces somewhere between 650 to 700 horsepower.

Think of all that horsepower in a car that weighs less than most subcompact cars with their 68 horsepower economy engines. There's so much horsepower that the brakes alone can't hold the car still at an idle. To keep the car from lunging forward, the modified Powerglide transmission (well, at least the case is that of a Powerglide) is put in both first and reverse at the same time.

If you still don't think it takes any

The wheels turn furiously while the low-pressure tires try to grip the pavement. They could actually come off the rims if they weren't held in place by screws. **(right)**

The entire floating system in the drive wheels is safety-wired so that if the axle were to break the wheels wouldn't come flying off at speed.



When the last amber light on the Christmas Tree starting light goes, Dickey releases the air pressure that is holding the transmission in reverse at the same time that it is in first and launches "My Favorite Charity" toward the finish line less than nine seconds away.

special qualifications to be a drag racer, consider what the NHRA requires of its competition license holders. First, they have to have a valid state driver's license. They also have to have a Federal Aviation Agency class III-type physical examination. Then they are given a special cockpit-orientation test in which they have to be able to locate all the critical controls while sitting in their normal driving position blindfolded.

Finally, to get a competition license the applicants must complete six runs under various stages of acceleration and for varied durations to insure they can control the car.

Remember the heading "Driver Conduct" from the rules? To get a better picture of the sanctioning body's attitude toward safety read it:

continued

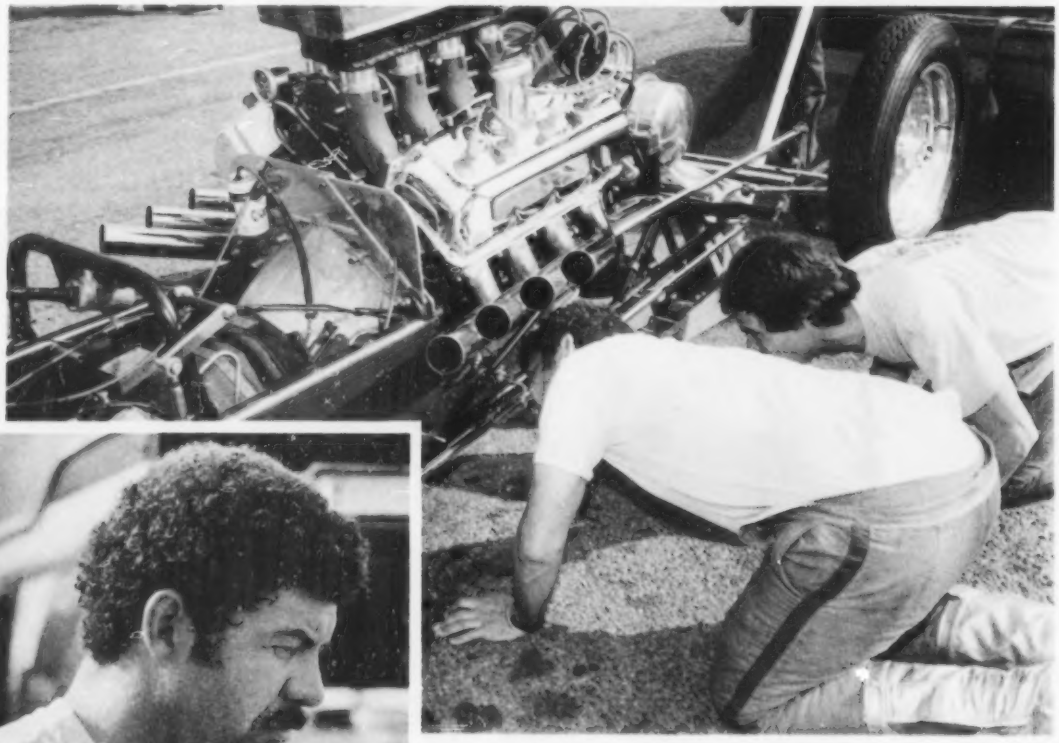
All cars capable of going faster than 150 mph at the end of the ¼-mile must have a braking parachute.

Any driver who refuses to voluntarily reduce speed, or stop, if the car being driven does not handle properly (i.e., excessive drifting of the car toward the center or edge of the track) or any driver whose car fishtails or weaves with undue regard for the safety of driver, spectators, or others, faces immediate termination of participation. If misconduct occurs during eliminations, the race is automatically forfeited to the offending driver's opponent. Any driver and/or pit crew member found to be under the influence of alcoholic beverages or drugs, regardless of amount, will be ejected from the event. Such a condition is cause for suspension and/or revocation of competition privileges.

If you were to ask Dickey what was the most important safety feature in drag racing he would answer, "There's not *one*, but a combination of many. If I were to roll my car at 150 mph, the seat belt, shoulder harness and crotch belt would keep me from moving. Then the roll cage would keep me inside the car and my fire suit would keep me from burning. And that's just one example of a combination of things."

Another example of a small safety rule comes into play if a car is leaking any fluids — water, oil, transmission fluid. "If you're leaking anything they'll shut you down," Dickey noted.

If you recall the sergeant's comments about a small amount of liquid causing the car to go sideways, you can understand why even this small precaution is so important to the sport's safety. And it is all these small precautions that make drag racing the safest form of motorsport.



When something goes wrong there's a quick look under the car, but Dickey's expression tells it all.

(left)
"When I think about getting in a hurry to put the engine back together," Dickey confessed, "all I have to do is look at these broken pistons in my right hand and I slow down and do the job right." The flattened oil pan and broken frame rail in his hand are the result of a wild, wheel-standing start.

(right)
Would you buy a car used only on weekends for very short trips from this man?

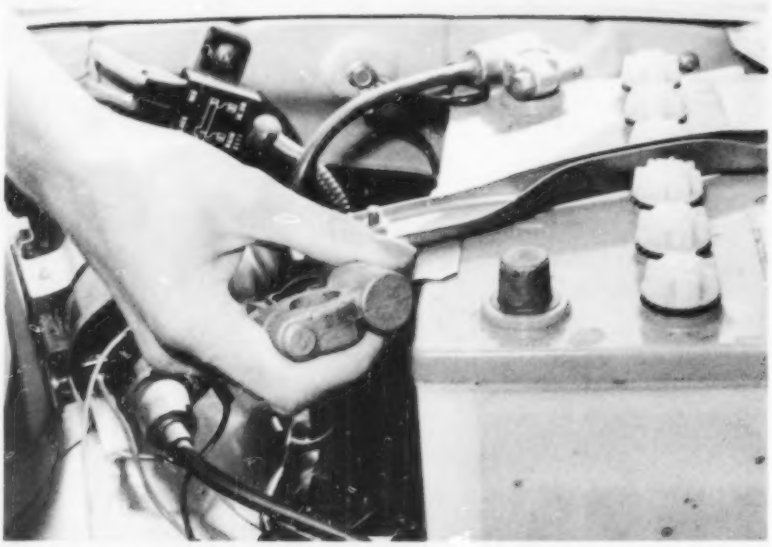
GETTING STARTED:
The Power of Life

by Cadet Michael T. Panarisi
U.S. Air Force Academy, Colo.

It happens all the time: "My car won't start; it won't do anything!!!" Another classic case of Electrical Problemitis, a dreadfully common disease that renders cars lifeless at the most inopportune times. The prevention of this major malfunction includes a host of remedies, many of which can be performed by the unsuspecting car owners at a nominal cost.

A car's electrical system serves two primary purposes. First, it supplies the engine with a means of starting, and second, it provides electrical power for the various appliances, such as the lights and windshield wipers. Unfortunately, this is probably the most delicate, and most often neglected, system.

The batter is the heart of the system. Its primary purpose is to store and provide, through a chemical reaction, the electrical energy necessary to excite the starter and turn the engine over.



Routinely clean the terminals and connections on your battery.

Depending upon the size of the engine, the size and capacity of the battery varies. A good rule of thumb is to match the battery's output rating, measured in "amps" or "cold cranking amps," to the displacement of the engine, with an absolute minimum of 300 amps.

Unless the battery is labeled "Maintenance Free," the fluid level inside should be checked often, perhaps once every three weeks. Should it be necessary to add water, only distilled water should be used. Ordinary tap water contains many impurities that can interfere with the battery's chemical reaction.

The only other attention the battery requires is the periodic cleansing of its terminals and connections. This can be done with commercial cleansers or a thick solution of baking soda and water. Scrubbing the parts with a stiff wire brush makes the job easier. It is very important that the cleansing solutions are not allowed to enter the interior of the battery.

After the terminals have been cleaned and the connections replaced, a thick coating of wheel bearing grease or petroleum jelly will help prevent the formation of future corrosive build-ups.

If the battery's condition is questioned, a simple test can be performed which shows its actual capacity. A tool called a hydrometer is dipped into each of the battery's cells, where it extracts a small

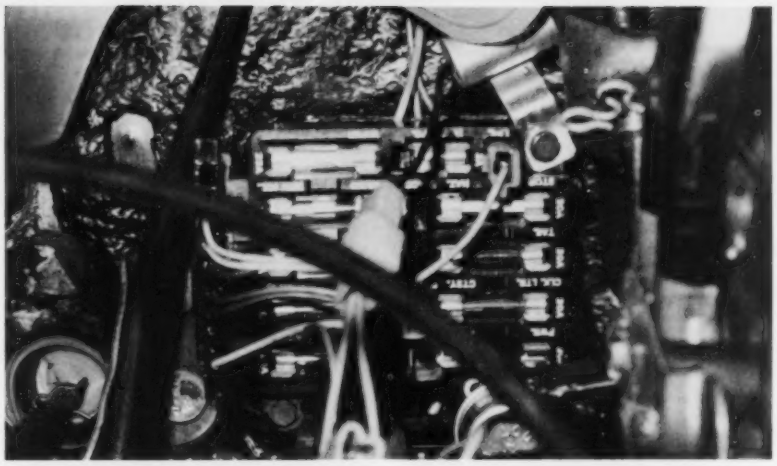
(left)
Fuses are usually located under the dash.

amount of fluid. Small spheres, located in the see-through tube, will float according to the battery's condition. A hydrometer is readily available at most auto parts stores, or the test can be performed by a service station, usually free of charge.

If the battery were the only source of electrical power, its life would not exceed two or three hours. Fortunately, a device called an alternator helps the battery with its electrical chores. While the engine is running, a belt spins a group of magnets through a field of wire, thus producing electric current. This current is used to recharge the battery as it is being used.

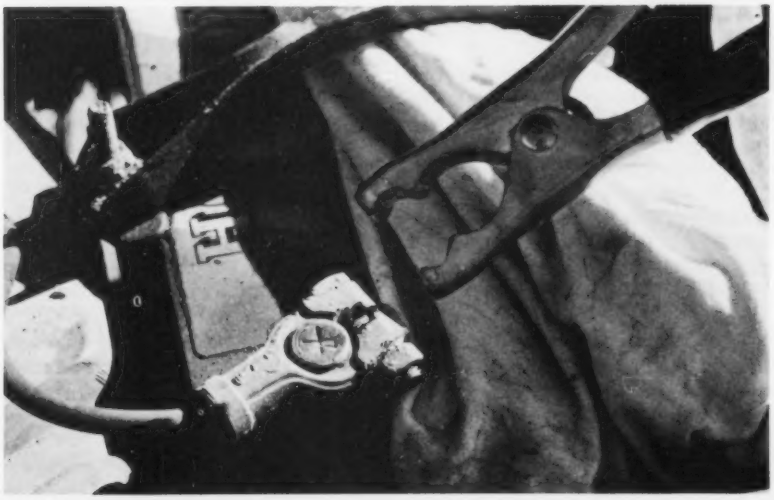
Theoretically, under this system the battery could last forever. This, of course, is not the case. Due to the nature of its chemical reaction, the battery slowly and irreversiblely destroys itself. However, with proper care a battery can be expected to last up to five years or even more. The major cause of battery failure lies within the charging system. The belts which turn the alternator must be properly tensioned and in good shape.

With all of this electricity available, a device called a regulator is used to send energy where it is needed upon demand. This protects the battery and every other electrical appliance from getting too much or too little energy, but it is very sensitive and prone to failure. The most common problem arising from its failure is the discharging or overcharging of the battery.



Fuses aren't easily found.

The alternator belt should be checked regularly to be sure the belt is tight.



The first jump start connections are to the positive sides of both batteries.

To protect the smaller electrical appliances from excess enetgy, a fuse is placed between the source of power and the unit itself. For convenience, the fuses are found together in a common fuse box, usually located under the dash on the driver's side. A fuse is nothing more than a thin wire encased in plastic or glass, which will melt when too much energy passes through it.

Fuses burn out with normal use, and if a device such as the horn or radio fails, the fuse should be checked first. If the fuse is "blown" it should be replaced with a fuse of the same rating. Replacing a fuse with

continued

The final jump start connection is made to the "dead" car's frame or engine block.

Attempting to jump start a vehicle incorrectly can cause the battery to explode. No, that's not rain water around the ruined battery, it's battery acid.

a larger one can damage the circuit that it is intended to protect.

Unless the car was purchased from the factory with gauges, a red "idiot light" will glow on the dash in the event of an electrical problem. I strongly recommend the use of gauges over the light. If your car is not equipped with them, a set may be purchased from the factory or through an auto parts store. These gauges are known to be much more reliable, and they provide the driver with a graphic scale of the system they are monitoring.

If the car will not start, a procedure known as the "jump start" may be applied, with caution. The procedure utilizes the energy produced from another car to start the "dead" car. A large set of cables are used to carry the current from one car to the other.

The following steps should be followed when attempting a jump start:

- Insure that both cars have identical electrical systems, i.e. both are 12-volt, negative ground. (This is the most common system; however, some foreign cars utilize a 6-volt system.)

- With the "alive" car running, one end of the cable is connected to the alive battery's positive terminal, and the other end of the same cable to the dead battery's positive terminal.

- Then one end of the other cable is connected to the "alive" battery's negative terminal and the other end of the "dead" car's frame or engine block.

When this is completed, a small spark will be seen at the negative connection. If this final negative connection were to be made on the "dead" car's battery, the spark could cause the battery to explode.

If the connections are made improperly, the result will be a large flaming spark. This could cause both batteries to explode.

By making the final connection at a distance away from the "dead" battery, this explosion can be avoided.

The electrical system, despite its sensitivity, can provide years of trouble free operation if it is taken care of. By following these simple guidelines, the system can be protected from failure for many years. The key to keeping the system in good condition is recognizing possible problems early and correcting them as soon as possible. The owner's manual should also provide a troubleshooting checklist and a guide for the maintenance of the system.

RECALL LETTERS

Have you ever received a recall letter on your car? What did you do about it?

Only about half the owners of recalled automobiles bother to return their cars for free repairs according to the General Accounting Office (Congress's auditing agency). GAO thinks response would be better if the letters were easier to read and more direct. For instance, one manufacturer's letter said, "Loss of front braking at a time when minimum stopping distance is required could result in vehicle crash without prior warning."

GAO's alternative was, "Without front brakes, you could crash if you need to stop in a short distance." In other words, says the government, let's be blunt about it.

If you get a recall letter, don't ignore it. The letter would never have been sent if the problem weren't important.

FUN IN MINNESOTA

Minnesota is putting a lot of effort into programs to discourage drunk driving. On some roads the state has installed a variation of the famous Burma Shave roadside jingles of the 1940's. A cluster of five little red and white signs gives out the message: "It's best . . . for one . . . who hits the bottle . . . to let another . . . use the throttle." And signs at gasoline pumps warn: "In Minnesota, Anyone Who Can't Walk a Straight Line Will Get a Month to Practice."

RENTAL AGENCIES AND CAR SAFETY SEATS

Two of the nation's largest car rental companies are making car safety seats for children available at many outlets. Hertz has them available with two-day advance reservations at all corporate airport and downtown locations. National has them available in most major communities and requires seven-day advance reservation. National is also reported to be preparing special promotional discounts for seatbelt users.

CRACKING DOWN

The Air Force is cracking down on members who drive under the influence of alcohol and drugs. The "crackdown" is part of President Ronald Reagan's long-term objective to reduce alcohol and drug-related accidents nationwide. The president appointed a 30-member presidential commission on drunk driving to combat what he called "the epidemic of drunk driving on the nation's roads."

The new campaign against driving while intoxicated aims to reduce alcohol-related highway deaths involving servicemembers by 10 percent a year for the next five years. Educating drivers and changing attitudes and behaviors toward driving while intoxicated within the total force has become a major Air Force initiative. The Air Force also plans to establish base and local community programs that will define and solve mutual DWI problems, and to establish an ongoing internal information campaign and assessment program.

NEW PROGRAM ON DRUG USE AND DRIVING AVAILABLE FROM DEALERS

A new audio-visual presentation on the dangers of drug use and driving is now available from some 8,500 new car, light truck, and tire dealers around the country. The dealers are members of the Dealers Safety and Mobility Council, an affiliate of the Highway Users Federation.

Entitled "Double Trouble: Drugs and Driving," the program consists of a 12-minute narrated filmstrip, a leader's discussion guide, and special handout brochures describing what actions citizens can take to discourage drugged driving and what kinds of organizations are available to help them. It is available for free loan from dealers to schools, church groups, civic and service clubs, and other organizations interested in promoting traffic safety in their communities.

The filmstrip illustrates the influence of drugs on a driver's ability to stay alert and recognize dangerous traffic situations. It explains how different drugs affect the brain and central nervous system, and how mixing drugs with alcohol can double the impact of both.

"Double Trouble" is the third in a series of audio-visual safety programs offered to community groups through participating dealers. The first two programs, "One Drink Too Many" on the dangers of drunk driving, and "Car Care for Safety" on the importance of keeping vehicles in safe operating condition, were released in 1982 and are also available nationwide.

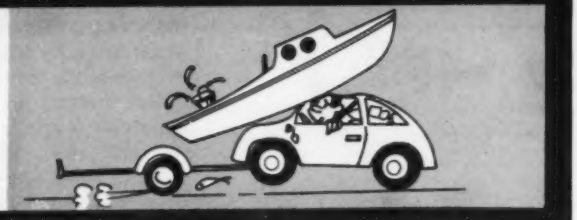
Groups or individuals who have difficulty locating a participating dealer should contact John McCawley, Dealer Activities, Highway Users Federation, 1776 Massachusetts Avenue, N.W. Washington, D.C. 20036, telephone 202/857-1253.

Companies with dealers supporting the program are American Motors Corporation, Chrysler Corporation, Firestone Tire & Rubber Company, Ford Motor Company, General Motors Corporation, Goodyear Tire & Rubber Company, National Tire Dealers & Retreaders Association, Nissan Motor Corporation in the U.S.A., Inc., Toyota Motor Sales, U.S.A., Inc., and Volkswagen of America, Inc.

HIGHER RISK AFTER DARK

Despite the overall decline in traffic deaths, nighttime fatalities are rising. Both the number and percentage of nighttime traffic deaths are climbing. About 62 percent of all traffic deaths now occur at night compared to 53 percent in 1974. The mileage death rate (fatalities per 100 million vehicle miles) is about four times the daytime rate on both rural and urban roadways.

LETTERS to the EDITOR — Backfire



WITH A LITTLE HELP FROM THE BELT

I was reading your issue of DRIVER (May 1982) and saw the article on "Seat Belts Do Save Lives." I enjoy your magazine and read it every month we get it. I agree with the statement 100 percent. Believe me I have experienced it. Here is a true story that recently happened.

I used to not wear seat belts because of some of the reasons you hear everyday ("They irritate me," or "What if you were in a wreck and fire broke out and you were pinned in the vehicle," or "I'm a safe driver, I don't need them").

Well, I bought myself a 1972 two-door Vega hatchback with seat belts. When you sat in the seat a buzzer would sound and would not go off until you snapped that seat belt on. I finally got myself and my family used to snapping them every time we got into the car.

Well, in May 1982, the seat belts in my car were tested. I was coming back from grocery shopping (which I do by myself due to the lack of space for groceries and my family) and doing about 30 to 35 mph (speed limit for the area was 35). I was crossing this bridge heading northwest. There was a pickup truck pulling a trailer with a boat heading in my direction (he was traveling southeast). All of a sudden the trailer came unhooked from the truck and swerved into my lane.

It all happened so quickly. The trailer and boat hit my car head on (both doing 30 to 35 mph). On impact, the boat broke loose from the trailer and went up my car, using it as if it were a ramp. The boat went airborne for approximately 96 feet and came to rest facing north. The trailer lodged underneath my car. The top of the car was caved in. When the car came to a stop, I unbuckled my belt and got out of the car on my own with minor bruises and a scratch on my hand. The groceries had flown all over the car.

I look at it this way: If I hadn't been wearing that seat belt, my face could have hit the windshield and possibly resulted in serious injuries or maybe even death. Nobody believes I got out of the wreck alive. I told them the seat belt was what saved my life plus some help from the Lord. If my family had been in the car, I don't know how many would have made it.

So I urge you people who don't wear seat belts, don't wait until it's too late. Buckle up now!

Sgt R.G. Owens, Jr., USMC
Camp LeJeune, NC 28542

"MAKING IT CLICK" AGAIN

Although I have not been involved in an auto accident during the past seven years, you may still be interested in my story about why I started wearing seat belts.

In 1970 I purchased my first vehicle with power steering and power brakes. Not being used to the power accessories, every time I turned a corner or applied the brakes I would end up on the right side of the seat or on the floor. It didn't take me very long to decide that this couldn't go on much longer. That's when I tried on my seat belt and found that it kept me behind the steering wheel where I belonged. Little did I know at the time that the small strap would someday save me from serious injury or maybe even death.

In 1975 the right front wheel of my car went off the road and when I attempted to pull the car back on the road, it went out of control and started sliding sideways down the road. The front of the car hit a pickup truck broadside, totaling both vehicles. My car hit so hard that the hood and drive shaft flew off and the engine (a big 400-cubic inch) was turned sideways. My head hit the windshield, busting it, but thanks to my friend (the seat belt) I didn't go through the windshield and my chest didn't hit the steering wheel hard enough for me to feel it.

Does it pay to wear your seat belt? You bet your *life* it does! Incidentally, the State Trooper who investigated the accident said he couldn't believe that I was still alive nor could he or the judge believe that my wife, my two sons and my mother-in-law were in the pick-up!

MSgt Johnny E. Bordelon, USAF
England AFB, LA 71311

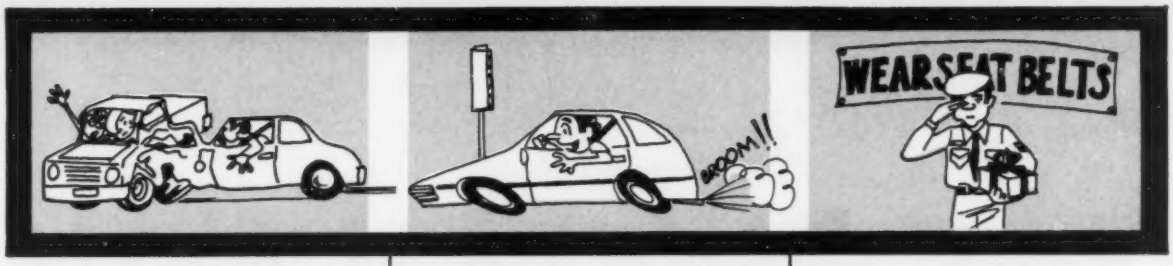
REWARDING FOR SAFETY?

I am reading your January 1983 issue and am amazed to read the comments of correspondent N.A. Broyles of NAS Jacksonville.

He states that DOD directives require seat belts to be worn on military installations. Correct (in Europe they must be worn off base as well — not only because of national laws, but through regulation). He then goes on to say in effect "but how are we going to make personnel comply?" — suggesting a positive incentive program to reward seat belt wearers!

I'm sure all your readers will agree that this is the most *negative* idea ever proposed. If we start paying bonuses to people for obeying regulations, where will it stop? A free meal at the club if we salute? A free hair cut voucher if we turn up for work? He goes on to say " . . . It might even save lives, by rewarding safety."

Doesn't Mr. Broyles realize that the regulation was sensibly made — to save lives. In a disciplined law abiding environment, regulations



must be obeyed, and offenders *must* be punished. I am a safety officer with the United States Air Force and would instantly resign if such a negative policy were ever introduced here.

Finally, a comment on the use of seat belts in Great Britain. This small country, well known to have more vehicles per mile than anywhere on earth, introduced a "Wear Seat Belts" law just one month ago. Already doctors and surgeons in hospitals across the country are amazed at the reduction in fatalities and serious head and other injuries. The number of people wearing seat belts has risen from 25 percent to over 95 percent with a maximum fine of $80 for noncompliance.

Can you imagine the problems and cost of giving a prize to all those who obey the law? Come off it my good friend Mr. Broyles! Start thinking positive.

Squadron Leader
'Red' Dunningham, RAF (retired)
Mildenhall, England

STATING THE TRUTH

I've been following your articles and the responding letters about seat belt usage with great interest.

My son, age 19, was killed in an accident six months ago. He was not wearing his seat belt, nor was his passenger.

The car was traveling on a narrow road which had been re-paved so much that there was a four-inch drop from pavement to shoulder. His right front wheel dropped off the pavement and when he tried to bring the car back onto the road the car flipped up onto the two left tires. He still might have made it, except that the passenger fell against him and all control was lost. The car crossed the road and hit a concrete abutment. Since the window was down, my son was pushed out of the window and died instantly of massive head injuries.

We had always insisted on seat belt usage in our cars and stressed that he should use them whether we were with him or not. Apparently we didn't get the message through, or he simply didn't believe it could happen to him. How I wish we could have made him understand.

Now, I hope everyone reading your magazine will take heed and buckle up as soon as they are seated in a car. Your articles are not using scare tactics — they are simply stating the truth and performing a great service to those wise enough to pay attention.

By the way, my son's accident occurred five miles from our home — so it's also true that selt belts are not just for long trips.

Thank you for the service you are providing in this area. Keep up the good work.

Sally T. Baughn
Fort Gillem, GA 30260

MORE PERFORMANCE IN DRIVER

I have to congratulate you on your "Performance and Catch-55" article in the December 1982 issue of DRIVER. It was the first real admission from DRIVER that street performance is acceptable if executed with forethought and restraint.

I would like to correct one very common misnomer that cropped up again in Catch Mpg.

Starting out smoothly and slowly is 180° out from what you need to do. According to a Driver Education film used by the Department of Public Safety in Arizona, and verified by a recent engineering study at B.M.W., you should accelerate using approximately ¾-throttle, while shifting as early as possible without lugging until cruising speed is attained.

The logic behind this technique is: Mileage is greatest at steady state cruise. Accelerating is wasteful. You should therefore attempt to minimize accelerating time and maximize cruising time. The ¾-throttle position was chosen to reduce pumping losses inherent in the intake cycle of a 4-stroke engine (diesels excluded). Finally, shifting as soon as possible keeps RPMs low, which is in agreement with your statements.

This technique is easy in a manual transmissioned car. Automatics pose problems since they sense load as well as RPMs. An automatic can be reprogrammed for 2000 RPM shift points under load. Or it could be shifted manually 1st to 2nd, knowing that if you still have much accelerating left to do, you may remain in 2nd when you shift to drive until your foot is off the gas.

Thanks again, and let's see more *performance* in DRIVER.

Phillip J. Shiver
APO New York, 09039

The ¾-throttle acceleration works fine for four-cylinder engines that produce gobs of torque, as Double Tech said in the August 1981 DRIVER. But try it with a high horsepower V-8 and you'll not only waste gasoline but you'll burn away the rear tires. Our best advice is still: start out smoothly – something that can be done at ¾-throttle with a four cylinder, but takes a different foot feeling with a V-8.

Address your letters to:
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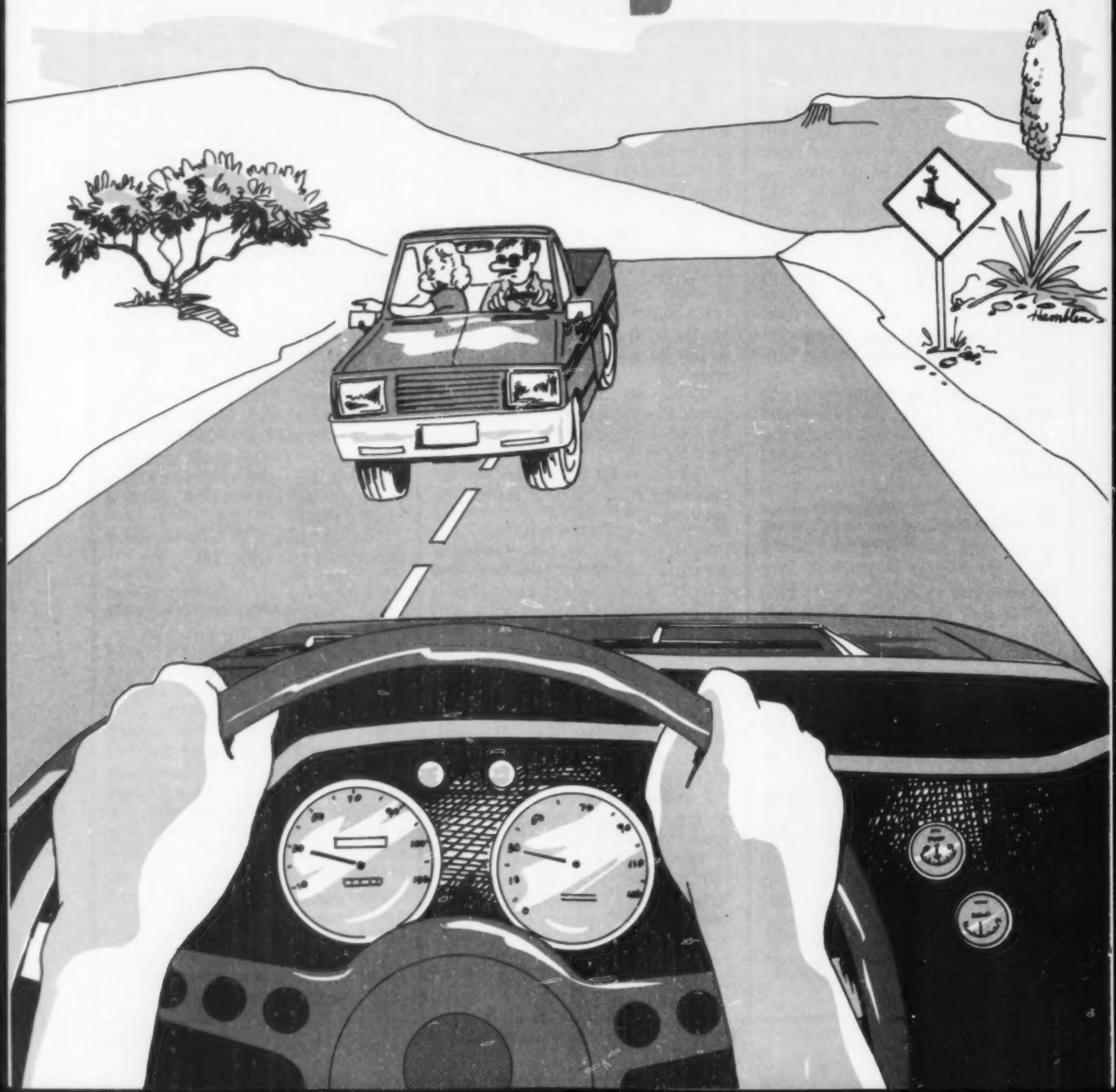
are YOU WEARING your Safety Belts ?